

## ABSTRACT

A method for in-vitro testing of active substances on cells includes the first step of providing a cell culture container with an interior chamber, an inside wall, and a first and second membrane system located in the interior chamber. A cell culture chamber is formed between the membrane systems and the inside wall of the interior chamber. The method includes providing a cell culture and cell culture medium in a cell culture chamber, supplying a fluid nutrient medium to the cell culture chamber, and carrying away metabolic products by means of the first membrane system. At least one gaseous medium is added to the cell culture chamber by means of the second membrane system, and at least one active substance is added to the cell culture chamber. The supplying takes place according to an adjusted active substance concentration-time curve and monitoring cell vitality. In addition, a device and the use of said device for testing the effect of idarubicin on the leukemic cell line CCRF CEM is described.